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(71) Applicant: **TRIO SPORT A/S**
Tarupvej 47-49
DK-5210 Odense NV.(DK)

(72) Inventor: **Joergensen, Knud Erik**
Rypebakken 26
DK-5210 Odense NV(DK)

(74) Representative: **Rindorf, Hans Joergen et al**
c/o Th. Ostenfeld Patentbureau A/S P.O. Box 1183
DK-1011 Copenhagen K(DK)

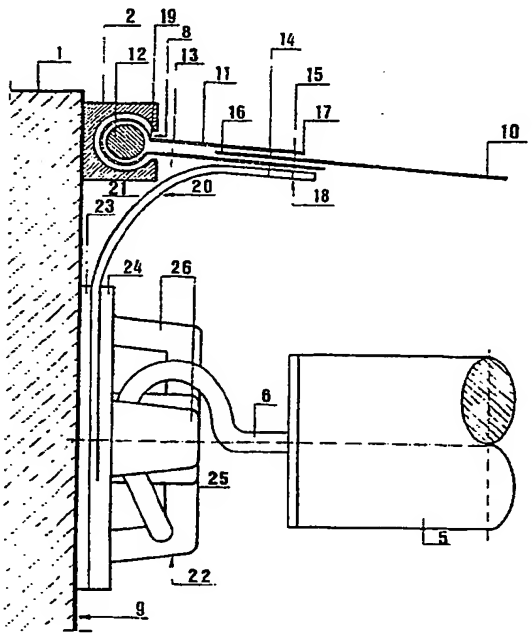
(54) Method for the attachment of a device onto a tent, device for attachment onto a tent, and a tent.

(57) In order to provide an awning or a tent adapted for easy, removable attachment onto a caravan (1) in a sealed fashion, it is known in the art to form the canvas of the awning with a beading along one edge thereof formed with a casing (19) enclosing a beading core (12) and by providing the caravan with a fixed, stationary, hollow profile (2) with a narrow, longitudinal slit so that the beading may be introduced from the end of the hollow profile (2).

In order to avoid the requirement of the attachment onto the caravan of fittings with anchoring eyelets for the tent ridge poles, the invention provides a method for attaching an anchoring bracket onto the canvas of the awning adjacent the beading edge so that the hollow profile is, in fact, used to support the poles (5). According to the method of the invention the anchoring bracket is attached by stitching or attachment through the two layers of canvas interconnected to form the casing (19) within a narrow, essentially linear zone (18) extending essentially parallel to the casing.

The invention also provides the anchoring bracket and an awning with anchoring brackets.

FIG. 2



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METHOD FOR THE ATTACHMENT OF A DEVICE ONTO A TENT, DEVICE FOR ATTACHMENT ONTO A TENT, AND A TENT

The present invention concerns a method for the attachment of an anchoring bracket onto the canvas of a tent or an awning as stated in the opening clause of claim 1.

The invention further concerns an anchoring bracket as defined in the opening clause of claim 2 and an awning with a beading along one edge intended for removable mounting onto a caravan.

Anchoring brackets of this general kind are used in connection with awnings for caravans, i.e. tents which may be arranged to form a compartment, wherein a longitudinal side of the caravan forms one wall, and wherein the tent is anchored to and supported onto the caravan. This kind of tent is quite popular and convenient in use, since it is possible to utilize the caravan for support and anchoring of the tent canvas and of the ridge poles, making it easy to design a tent, which is easily pitched and easily stroken, is spaceous and may serve as an awning or front porch at the caravan.

In order to provide a firm mounting of the canvas of the tent in a fashion sealed onto the caravan, it is a general procedure to design the canvas of the tent with a beading along one edge and to provide the caravan with a fixed, hollow profile with a narrow slit-like opening in order that the beading may be received in and retained in the hollow profile. The beading along the edge of the tent is conveniently manufactured by folding back a strip-like region of fabric along the edge of the tent and sewing or adhering the folded portion flat down onto the unfolded fabric portion to form a casing, which may enclose a beading core, e.g. a flexible rod, which may conveniently be permanently enclosed in or confined in the casing. In order to pitch the tent, the beading along one edge is inserted into the hollow profile from one end hereof and pulled along the hollow profile in the longitudinal direction into the desired position.

In order to anchor the tent ridge poles to the side of the caravan, it is general practice of the art to screw a number of anchoring brackets with eyelets into the side wall of the caravan just below the hollow profile. The ridge poles are normally terminated with hooks, which may be inserted into these eyelets. This mounting procedure, however, suffers a number of drawbacks. On one hand, caravans on the market are available in a great variety of sizes and shapes. On the other hand, awnings are also available on the market in a great variety of different sizes and shapes. The awnings are generally fully fashioned so that the ridge poles must be placed at predetermined positions relative to the canvas in the awning in order for the awning to take its intended shape. The great variety of sizes and shapes, however, makes it impossible to select standardized positions for the anchoring points. In order to allow a consumer the greatest possible choice in combining a caravan and an awning it is therefor not feasible to construct and market the caravan with fixed anchoring points. Instead anchoring eyelets are supplied as loose accessories so that each consumer, having made his choice of combination caravan and awning, must screw anchoring eyelets onto the caravan. This represents, on one hand, a craftsman-like procedure, which a consumer might rather not have to perform, and which he may be incapable of carrying out to a satisfactory result. Secondly it represents an intrusive operation in the outside wall of the caravan, which may be disfiguring and highly undesirable, e.g. in case the caravan should later be used in combination with a different awning.

It has been suggested that the anchoring eyelets be attached to the canvas of the tent adjacent the edge with a beading in order to utilize the hollow profile for anchoring the ridge poles, eliminating all other fittings or brackets on the side of the caravan. One solution of the prior art comprises a rubber pad with an anchoring eyelet and a flexible region intended to be glued onto the tent canvas. The pad is flat and generally rectangular, except for a rounding of the corners around the anchoring eyelet. In spite of the interesting prospects, this solution has not been successful on the market. This is believed to be attributable to a number of drawbacks inherent in the design. The rubber pad is flat and has to be glued along one edge to the tent canvas adjacent the beading. In the erected or in the pitched state with the canvas in the tent stretched in a direction close to horisontal away from the approximately vertical side of the caravan, the pad is likely to be bent close to a right angle (90°) and it must therefor be constructed of a relatively soft type of rubber so that it will not be torn off in the glued attachment. By making the pad soft, it is, however, not capable of providing a perfectly rigid support for the ridge pole. Insufficient support involves the danger of hitting the sides of the caravan with the ridge pole hooks with the danger of damaging the caravan surface.

In addition the method involving the attachment of the rubber pad by gluing it to the tent canvas surface is difficult to carry out to produce a well defined result, involving e.g. the danger that the glue adheres undesired parts, e.g. adhering a larger portion of the pad than desired, or glue seeping through the canvas of the tent adhering other re-

gions of the tent canvas together than those intended. In addition the tent canvas may be stretched by forces applied onto the pad so as to be deformed around the region of attachment, and e.g. the ribbon forming the casing may, in case the rubber pad is glued to one side of this ribbon, be pulled so as to travel around the beading core to be deformed. The rectangular contour of the pad interacting with the tent canvas, which inevitably is compliant to some extent, will in addition concentrate the forces along the edges of the rubber pad, involving the danger of stress cracking of the gluing or tearing of the tent canvas initiating from the regions adjacent the rubber pad edges.

Deformations in the tent canvas are more than a simple cosmetic disadvantage as they are likely to interfere with the insertion of the beading edge along the hollow profile. In case of hollow profiles of lengths of several meters as it is generally the case, the insertion may be a difficult procedure anyway, and this procedure may be even more difficult or totally impossible if the fabric forms folds or wrinkles, is deformed, contains glue residue, or in case the rubber scrapes along the outer surfaces of the hollow profile, causing added friction. It is of utmost importance that this insertion is not impaired in any way. Finally the insertion process, during which the rubber pad is likely to scrape along the caravan sides, may involve the danger of tearing off the pad and there may be a risk that rubber material tends to come off onto the caravan side, in particular for such types of rubber that are well suited for gluing.

These disadvantages are overcome by the method according to the invention as defined in claim 1. This provides a rigid attachment of an anchoring bracket, since the transfer of forces from the bracket onto the tent canvas becomes the best possible, affecting the canvas in the gentlest possible way, since forces applied to the anchoring bracket will have no tendency to pull the casing ribbon to make it travel around the beading core.

The invention further provides an anchoring bracket designed to be in a region near the zone of attachment to the canvas and extending herefrom partially towards the attachment eyelet more compliant along the side edges than in the mid region in order that forces applied onto the anchoring eyelet will be transferred to the zone of attachment with a reduced tendency to concentrate the forces at the ends of the zone, i.e. at the edges of the anchoring bracket. This reduces the risk of tearing of the canvas.

According to another preferred embodiment the anchoring bracket is provided in its region below the anchoring eyelet with a soft, compliant coating intended to serve as a sole, said sole preferably comprising material with a higher coefficient of friction than the remaining part of the anchoring bracket. This provides an excellent support of the ridge poles with no adverse effect onto the caravan side walls, maintaining the brackets stationary by friction, in particular in case the caravan side wall is slightly roughened, while the remaining part of the anchoring bracket may be constructed of a relatively rigid and smooth plastic with the advantage of causing less frictional resistance against the hollow profile during the insertion of the beading.

According to a further preferred embodiment the anchoring bracket is formed of a flat piece of flexible material contoured with a wide base line adjacent the zone of attachment and with sides converging or tapering in the direction towards the anchoring eyelet. This provides a desirable transfer of forces applied onto the eyelet to the zone of attachment and makes the bracket tend to slip aside in case it meets obstacles adjacent the hollow profile during the insertion process.

According to a further preferred embodiment the anchoring eyelet comprises a total of four eyelets oriented along two axes parallel to the plane of the sole surface and mutually perpendicular. Hereby the. ridge pole hooks may be inserted in directions so as to obtain the best possible support for all directions or attitudes of the hollow profile at the region adjacent the anchoring bracket, which is advantageous as the hollow profile may extend vertically, horisontally or in oblique angles.

According to a further preferred embodiment the sole is attached to the remaining part of the anchoring bracket by a stud or pivot inserted into a sleeve in order to make it pivotable with a pivot axis perpendicular to the sole surface. This provides an added flexibility, allowing a small extent of motion of the tent canvas in directions along the hollow profile, even while the tent is pitched and the ridge poles rigidly supported by friction against the caravan side wall.

Further objects, features and advantages will appear from the following detailed description of non-limitating, illustrating examples with reference to the drawings, wherein

figure 1 shows a perspective view of a caravan with the poles for the awning erected,

figure 2 shows a section along a plane perpendicular to the hollow profile showing the position of an anchoring bracket according to the invention,

figure 3 is a planar view from below showing a part of the tent canvas adjacent the beading edge with the attached anchoring bracket, and

figure 4 shows a section through an anchoring bracket with the sole in an exploded view.

In order to explain the use of the invention, reference is first made to figure 1, showing the

arrangement of a caravan and the poles as they would be positioned in the erected or pitched awning, the canvas and the guy ropes of the tent being omitted from the figure in order to illustrate clearly the arrangement of the underlying parts. The figure shows a caravan 1 being provided along a portion of the edge of one side wall towards the roof and towards part of the front wall as well as part of the rear wall, respectively, with a hollow profile 2 extending from the profile front end 3 until the profile rear end 4. Outside the caravan a framework of tent poles 5 is erected with anchorings to the caravan at three points 7 in a way to be explained in more detail below.

Referring now to figure 2, it will be further explained, how the canvas of the awning and the ridge poles are attached to the caravan. To the left hand side of figure 2 the portion of the caravan 1 with the hollow profile 2 is shown. The awning canvas 10 is along the edge intended to be attached to a caravan provided with a beading. As it may be seen in figure 2, the beading is formed by folding a ribbonlike length of fabric 11 along a longitudinal folding line, stitching it together at the stitching 13 so as to form a casing and stitching it to the edge of the tent canvas 10 with two stitchings 14 and 15 so as to embrace the tent canvas edge. A beading core 12, e.g. a flexible plastic rod, has been inserted into the casing. As it may be seen in figure 2, the slit 8 in the hollow profile 2 is so narrow that the folded edge ribbon 11 with the beading core 12 is retained therein once it has been introduced therein. The hollow profile 2 is illustrated in figure 2 as mounted onto the caravan side wall adjacent the top edge, but it could alternatively and equally well be mounted on the caravan roof adjacent the side wall. The invention is obviously equally well applicable in either case. As it may be understood, referring also to figure 1, the awning canvas is attached by introducing an end of the beading through the open profile front end 3 or alternatively the open profile rear end 4 and pulling it with the canvas 10 along the entire length of the profile, whereafter the canvas is attached thereto in a rigid and sealed manner.

Figure 2 further shows a section through an anchoring bracket 20 attached by the border stitching 15 to the tent canvas and to both sides of the folded edge ribbon 11. The anchoring bracket 20 comprises a flexible, flat piece 21 formed so that an upper portion hereof may lie flatly onto the tent canvas 10 while the opposite portion lies parallel to the caravan side wall. The anchoring bracket 20 is formed with a protrusion 23 adapted for contacting the caravan outside and serving as an contact sole. The anchoring bracket is provided on the side opposite the sole 23 with a thickened region 24 and with an anchoring eyelet formed essentially of a plateau 25 parallel to the sole contact surface and with a number of side ribs 26 as it will be explained in more detail below. A tent pole or ridge pole 5 is attached by inserting a hook 6 mounted permanently in the pole end through the anchoring eyelet. With the awning erected and stretched as in the normal state ready for use, the pole 5 illustrated in figure 2 will be forced against the caravan side wall, the friction between the sole 23 and the caravan side wall being generally sufficient to retain the anchoring bracket 20 in a stationary position. It may be understood from this figure that the flat piece 21 must have a sufficient length so as not to be stressed by the force from the pole. Otherwise this force could cause an unnecessary stress onto the tent canvas, reducing also the friction forces. It is generally sufficient if the bracket according to the invention has a length so that the sole of the anchoring bracket in the flat state extends beyond the tent canvas beading. An additional requirement is that the length must be sufficient to allow bending of the anchoring bracket as shown in figure 2 without causing significant forces onto the tent canvas.

Reference is now made to figure 3, where a portion of the tent canvas adjacent the beading edge with the anchoring bracket 20 attached by a stitching is shown from below, the anchoring bracket 20 being shown in its unfolded, flat state. Figure 3 shows the stitching 13 closing the casing with the beading core i2 (shown in phantom), the edge of the tent canvas 16 (in phantom), a middle stitching 14 holding together the edge ribbon and the tent canvas and a stitching 15 to the right holding together both sides of the edge ribbon, the tent canvas and the anchoring bracket 20. The region of the anchoring bracket where it is attached to the tent canvas - in this embodiment a portion of the stitching 15 -will be referred to as the zone of attachment 18. To the far right the edge 17 of the edge ribbon is shown. The casing could alternatively have been made by folding back a marginal region of the tent canvas and sewing these two portions together, but according to the most preferred embodiment the casing is made as shown in figure 3 from a separate length of material so that a piece of material, which is particularly strong and smooth, may be selected in order that the edge is sturdy and may easily be slipped into the hollow profile. The casing material may comprise a woven, plastic-coated length of fabric or a non-woven, granulated length of plastic with a low friction outer surface.

Although figure 3 shows an attachment of the anchoring bracket by the stitching 15, other ways of attachment could obviously be conceived within the frames of the invention. The particular layout of seams in the edge stitchings can be selected by

those skilled in the art in various ways and the anchoring bracket may be adhered in any of the edge stitching seams or in any combination hereof. Other possibilities could be an attachment of the anchoring bracket by separate stitching, by welding or by riveting. In case such dedicated stitchings or a riveting procedure is used, the points of attachment should preferably be located between edge stitching seams. The zone of attachment should in any case extend essentially linearly and essentially parallel to the casing in order to ensure that the transfer of forces to the tent canvas affects the tent canvas in as gentle a fashion as possible.

Figure 3 further shows how the anchoring bracket 20 has an essentially trapezoid contour with a wide base-line edge 30 along the stitching and inclined side edges 31 converging or tapering in the direction towards the anchoring eyelet shown to the left in the figure. Hereby the anchoring bracket becomes somewhat more flexible along the side edges 31 relative to the mid region in order that forces applied to the anchoring eyelet will be distributed or graduated more smoothly along the stitching. It is noted that the tent canvas exhibits considerable flexibility and that this implies a risk of forces applied onto the anchoring eyelet being concentrated to regions along one side edge or both side edges 31 with the danger of tearing the stitchings or shearing of the tent canvas initiated in these regions. It is therefor important that the anchoring bracket is more flexible along the side edges relative to the central region. The inclined side edges have a further advantage as they will make the anchoring bracket tend to slip aside, should it meet stationary obstacles during the pulling of the beading along the hollow profile.

To the left hand side it is shown how the anchoring eyelet comprises an approximately cross-shaped plateau region 25 connected to the underlying, thickened region 24 by four side ribs 26 and a central bushing or sleeve 28 (shown in phantom). This provides effectively four anchoring eyelets at hand to obtain the advantage that the tent pole hook may always be inserted from above and in a direction downwards or at least downwardly inclined regardless of the inclination of the hollow profile 2. As, for the purposes of the invention, normally only one anchoring eyelet is used, three eyelets will be freely available for other purposes, which is an additional advantage.

Reference is now made to figure 4 showing in section the two components of the anchoring bracket shown in separated state and in section. To the left the first part is shown comprising a shoe 32 with the sole 23, which is flat with a circular contour. Centrally the sole 23 merges into an axial mounting stud 33 with an annular arrester rim 34 at the top. The figure shows how the arrester rim 34 is formed with an inclined upper surfac and with a holding surface below in order that it may easily be introduced into a bushing to be latched and retained therein. This part may advantageously be manufactured by molding, e.g. of an extrudable rubber material.

To the right in figure 4 the second part of the anchoring bracket is shown, said part comprising an essentially flat piece 21 with a thickened region 24, a plateau region 25 parallel to the flat piece 21 with side ribs 26 (only two of the side ribs are visible in figure 4) and with a central bushing 28 with an opening 27 with an arrester lip. This component of the anchoring bracket may be manufactured my molding of plastic, e.g. polyurethane, and these parts are obviously matched so that, by introducing the mounting stud 33 into the bushing 28, the shoe may be attached to and latched into permanent engagement between the anchoring bracket arrester lip 29 and the mounting stud 33 arrester lip 34. This provides a mount enabling the sole to pivot around the mounting stud 33 axis. This design has the advantage that the anchoring bracket flat piece can be made of relatively hard and smooth plastic capable of providing solid and rigid anchoring eyelets, while the sole may be manufactured of a softer plastic and possibly a plastic with a higher coefficient of friction capable of providing a good frictional engagement with the caravan side wall. The possibility of pivoting the shoe relative to the remaining part of the mounting bracket provides some flexibility in use as the anchoring bracket trapezoid part may pivot slightly around the axis of the bushing 28 without loosening or moving of the frictional engagement.

Claims

1. A method for the attachment of an anchoring bracket onto a border region of a piece of tent canvas, said tent canvas border region being formed by folding back and attaching a part of the canvas onto the unfolded part thereof in order to form a casing along the tent canvas edge, said anchoring bracket comprising at least one anchoring eyelet and a contact surface below the eyelet, said anchoring bracket being attached so that the contact surface may extend away from the plane of the tent canvas, **characterized** by said anchoring bracket being mounted by attachment through both the layers of canvas interconnected to form the casing, within a narrow, essentially linear zone, said bracket being positioned so that the zone of attachment extends essentially parallel to the casing.

2. An anchoring bracket for the attachment onto a piece of tent canvas adjacent a border region of said piece of tent canvas along a zone of attach-

ment extending essentially parallel to said border region, **characterized** by being in a region adjacent the intended zone of attachment and extending therefrom at least partially in the direction towards the anchoring eyelet more flexible along the side edges than in the mid region in order that a force applied to the anchoring eyelet will be transferred to the canvas at the zone of attachment with a reduced tendency of concentrating the force at the ends of the intended zone of attachment.

3. The anchoring bracket according to claim 2, **characterized** by being formed of an essentially flat piece of flexible material, said piece being contoured with a wide base line adjacent the zone of attachment and with side edges converging or tapering together in the direction towards the anchoring eyelet.

4. The anchoring bracket according to claim 1 or 2, **characterized** by said anchoring eyelet protruding out of the plane of the anchoring bracket flat piece.

5. The anchoring bracket according to claim 2, 3 or 4, **characterized** by being provided on the flat piece to the side opposite the anchoring eyelet with a soft, compliant coating adapted for serving as a contact sole surface.

6. The anchoring bracket according to claim 5, **characterized** by said coating comprising material with a higher coefficient of friction than the flat piece.

7. The anchoring bracket according to any of the claims 2 through 6, **characterized** by said anchoring eyelet comprising at least two eyelets with different orientations.

8. The anchoring bracket according to claim 7, **characterized** by said anchoring eyelet comprising four eyelets oriented along two axes parallel to the plane of said contact sole surface and mutually perpendicular.

9. The anchoring bracket according to any of the claims 5 through 8, **characterized** by said contact sole surface being formed on a separate part mounted onto the remaining part of the anchoring bracket by a stud on one of the parts inserted into a socket on the opposite part in such way that the contact sole part is pivotable around a pivot axis perpendicular to the contact sole surface.

10. An awning with a beading along an edge thereof intended for removable attachment onto a caravan by insertion of the beading into a hollow profile with a longitudinal slit secured onto the caravan, **characterized** by being provided with at least one anchoring bracket, said anchoring bracket comprising at least one anchoring eyelet and a contact surface for supporting the portion adjacent the anchoring eyelet against the outside surface of the caravan, said anchoring bracket being attached to said awning so that the contact surface may extend out of the plane of the adjacent portion of the awning.

11. The awning according to claim 10, **characterized** by said beading being formed by folding back and stitching together a band of fabric attached to the canvas of the awning or a border portion of the canvas of the awning to form a casing, said casing containing an elongate body constituting a core of said beading, and by said anchoring bracket being mounted by attachment through both layers of band or canvas forming the casing within a narrow essentially linear zone, said zone extending essentially parallel to said beading.

12. The awning according to claim 10 or 11, **characterized** by said anchoring bracket comprising an essentially flat and elongate piece of flexible material so that a portion of said bracket adjacent the zone of attachment may extend essentially parallel to the plane of the adjacent portion of the awning canvas, whereas another portion of said bracket may flex to extend approximately perpendicular to said plane.

13. The awning according to claims 10, 11 or 12, **characterized** by being provided with a least one anchoring bracket according to any of the claims 2 through 9.

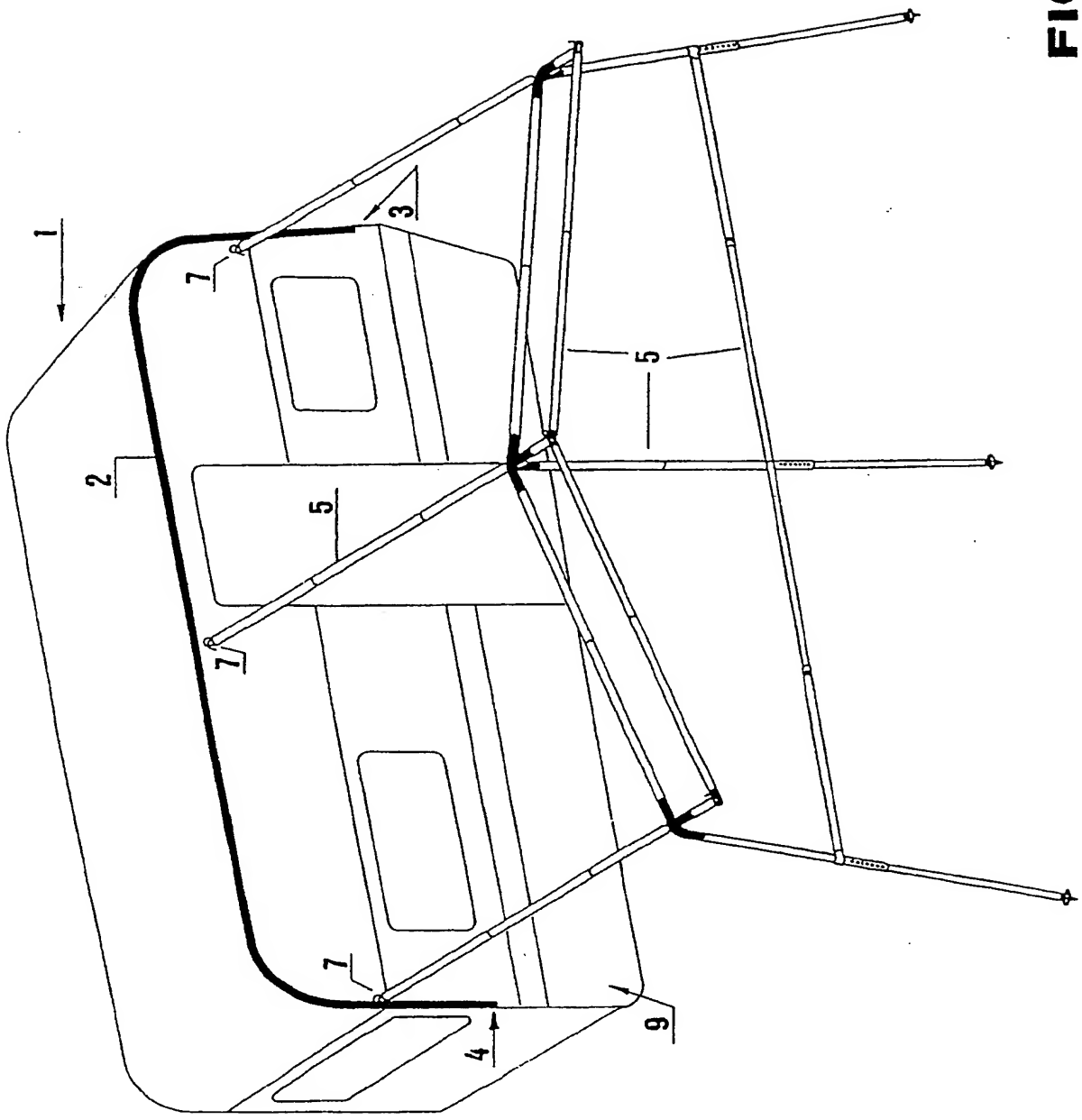


FIG. 1

FIG. 2

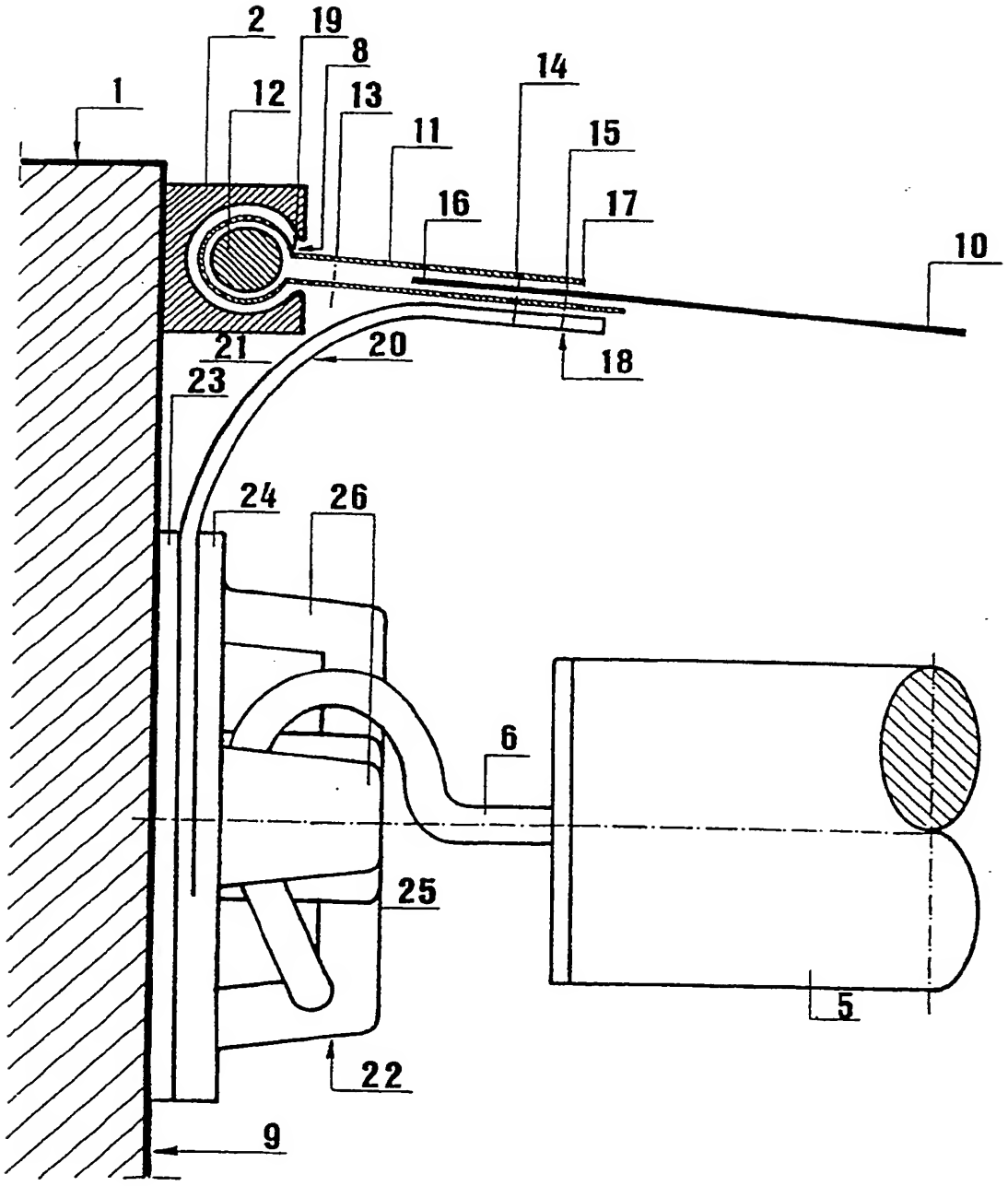


FIG. 3

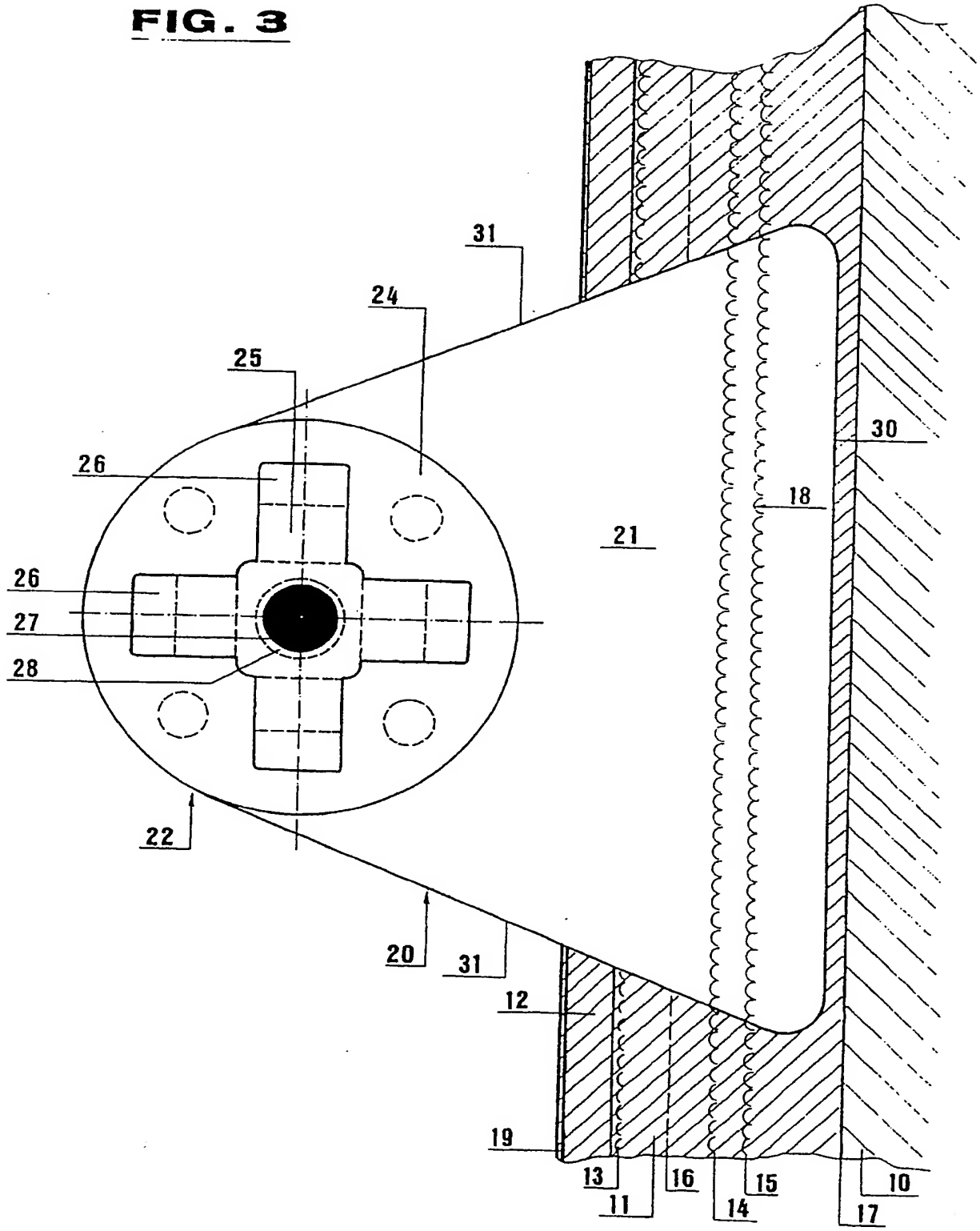
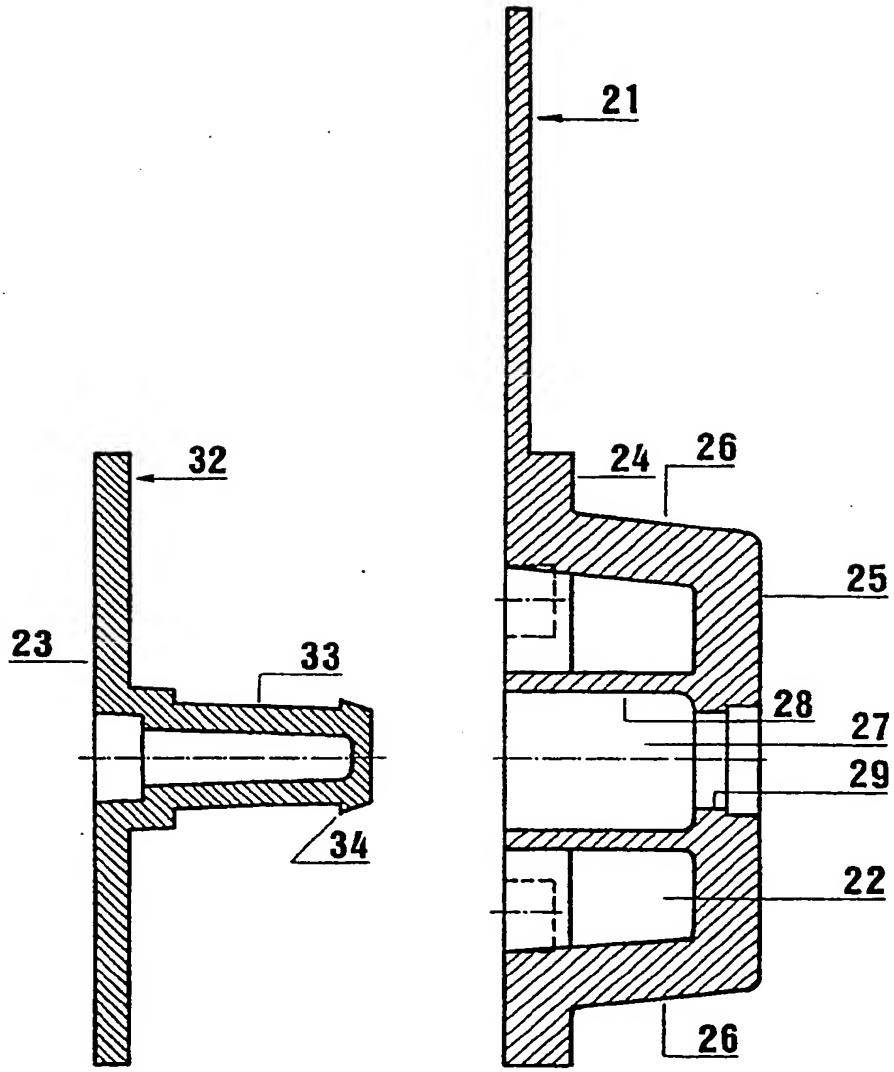


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number

EP 90 11 5985

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	GB-A- 926 369 (ROBERT GEORGES ANDRAULT) * Page 3, lines 23-89; figures 11-14 *	1	E 04 H 15/06 E 04 H 15/08 B 60 P 3/34
X	DE-A-3 736 537 (CAMPION PRODUCTION APS) * Column 4, line 51 - column 5, line 40; figures 1,2 *	10	
A		2-7	
A	FR-A-1 363 930 (ANCIENS ETABLISSEMENTS E. FAVEREAU) * Page 2, column 1, line 48 - column 2, line 5; figures 2-4 *	2	
A	FR-A-2 516 767 (BORES SIMON) * Page 2, line 15 - page 3, line 18; figures 1-4 *	2,3	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

E 04 H
B 60 P

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	05-12-1990	BARBAS A.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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